Lecture Plan for Java Programming (22CS031)

S. No.	Lecture No.	Topics	Programming Excercises
1	1-2	Introduction to JAVA: Java Introduction, History and goals of Java, Fundamentals of OOPs	
2	3-4	Overview of JDK, JVM, Garbage Collection	
3	5-6	Java Basics: Identifiers, Keywords, Java Data Types & Operators	
4	7-8	Practice Problems	P1.Aggregate and Percentage Marks of a student P2. Gross salary of an employee P3. Add one to each digit of a 4 digit P4.Add one to each digit of a 4 digit
5	9-10	Control Statements: Decision Constructs, Using Loop Constructs,	
6	11-12	Command Line Arguments	
7	13-14	Practice Problems	P1. The Number is Kaprekar or not P2. Generate first n Prime numbers P3. Next Closest Fibonacci Number
8	15-16	Working with Arrays: Creating and Using Arrays (1D, 2D, Multidimensional)	
9	17-18	Jagged Arrays	
10	19-20	Practice Problems	P1. Matrix Multiplication P2. Spirally traversing a matrix P3. Rotate a 2-D array by 90 degrees
11	21-22	Classes & Objects: Classes, objects and methods: defining a class	
12	23-24	Access Control, Method overloading,	
13	25-26	Practice Problems	P1. Convert given number of seconds to days, hours, minutes and second P2. Class-TimeSpan P3. class - BankFee
14	27-28	constructors, constructor overloading, use of this and static.	
15	29-30	Practice Problems	P1. Class - TollBooth P2. methods of class: Display of Strings
16	31-32	Inheritance: Working with Inheritance: Inheritance Basics & Types, Using super, Method Overriding,	
17	33-34	Dynamic method dispatch, final keyword.	
18	35-36	Practice Problems	P1. class - Box P2. BookCD P3. Marketer
19	37-38	Abstract Methods & Classes, Packages & Interfaces: Built-In Packages and User Defined Packages,	

20	39-40	Interfaces: Declaration, Implementation, Extending Classes and Interfaces	
21	41-42	Practice Problems	P1. Class - Customer and BankAccount P2. Class - MovablePoint and MovableCircle P3. Class : Circle and ResizableCircle
22	43-44	Strings, StringBuffer, StringBuilder & StringTokenizer: Introduction, Immutable String,	
23	45-46	Methods of String class, String Buffer class & StringBuilder class, toString method, StringTokenizer class. Practice Problems	
24	47-48	Practice Problems	P1. Capitalize the first letter of each word P2. Swap first and last character of each word in a string P3. Find occurrences of palindrome words in a string
25	49-50	Exception Handling: Exception handling fundamentals, Exception types, try and catch	
26	51-52	multiple catch clauses, nested try, throw, throws and finally, Creating custom Exception.	
27	53-54	Practice Problems	P1. Password too short Exception P2. Valid email address P3. Valid index of array
28	55-56	Multithreading: Java thread model, main thread, creating thread by implementing Runnable and extending thread class	
29	57-58	creating multiple threads, using isAlive() and join(), thread priorities	
30	59-60	Synchronization	
31	61-62	Practice Problems	P1. Multithreading Java: Greetings in reverse P2. Transcations in Account with and without Synchronization
32	63-64	Generics: Introduction, Generic Example, Generic Class, Generic Method	
33	65-66	Generic Constructor and Generic Interfaces	
34	67-68	Collections Framework: Introduction, Collection Interfaces	
35	69-70	Collections Framework: Introduction, Collection Interfaces: List, Queue	
36	71-72	Practice Problems	P1. Duplicate the Queue elements P2. Number is a Happy number or not
37	73-74	Collections Framework: Introduction, Collection Interfaces: Set(Overview), Collection Classes: ArrayList, LinkedList	
38	75-76	Collections Framework: Introduction, Collection Interfaces: Iterator, Working with Maps (Overview), Comparable & Comparator	
39	77-78	Practice Problems	P1. Remove duplicates from a vector P2. Implement Own ArrayList in Java

40	79-80	Collections Framework: Introduction, Collection Interfaces: Arrays, Vector, Stack	
41	81-82	Practice Problems	P1. Cut the chocolate smartly for maximum pieces P2. Find all pairs with sum K P3. Product Array - Ignoring the next
42	83-84	IO Streams: Stream Classes: Byte Streams, Character Streams, StreamTokenizer.	
43	85-86	Practice Problems	P1:Capitalize First Letter of every Word in a File P2: Strip HTML tags from a file
44	87-88	JDBC Connectivity: Introduction, Architecture of JDBC Database Connection.	
45	89-90	JDBC Connectivity: Establishing JDBC Database Connection.	